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EXAMINER	
CHANKONG, DOHM	
ART UNIT	**PAPER NUMBER**
2152	

DATE MAILED: 10/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/893,584	GANTI ET AL.	
	Examiner	Art Unit	
	Dohm Chankong	2152	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 March 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-17 is/are rejected.

7)☒ Claim(s) *2-4,6,7,9 and 12-15* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *6/29/2001*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1> Claims 1-17 are presented for examination.

Claim Objections

2> Claims 2-4, 6, 7, 9 and 12-15 are objected to because of the following informalities: as they are dependent claims, and as they refer to the method or policer previously defined in their parent claim, they should refer to these terms with "the", instead of "a". Appropriate correction is required.

Claim Rejections - 35 USC § 112

3> The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4> Claims 6 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. The following claims contain claim language that is ambiguous and not clearly understood:

i. Claims 6 and 7 both refer to "that traffic class"; it is unclear to which traffic class that this term is intended to reference.

Claim Rejections - 35 USC § 102

5> The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6> Claims 1-3, 5-7, 10, 11 and 14-16 are rejected under 35 U.S.C § 102(b) as being anticipated by Fichou, U.S Patent No. 5.909.443 ["Fichou"].

7> As to claim 1, Fichou discloses a method of policing packet traffic comprising:

policing packets of a first class in accordance with at least one policing parameter associated with the first class [column 2 «lines 34-61»]; and

policing packets of a second class in accordance with at least one policing parameter associated with the second class in a manner which gives to the second class at least a portion of a traffic throughput afforded to the first class by at least one of said at least one policing parameter associated with the first class of traffic which is not being used by the packets of the first class [column 2 «line 62» to column 3 «line 18»].

8> As to claim 2, Fichou discloses the method according to claim 1 wherein the at least one policing parameter associated with the first class comprises a first class rate guarantee, and wherein the at least one of said at least one policing parameter associated with the first

class of traffic is said first class rate guarantee [column 2 «lines 34-44» | column 9 «lines 18-24»].

9› As to claim 3, Fichou discloses the method according to claim 1 wherein the at least one policing parameter associated with the first class comprises a rate guarantee and a burst tolerance, and wherein the at least one of said at least one policing parameter associated with the first class of traffic comprises both the rate guarantee and the burst tolerance [column 2 «lines 34-61» | column 8 «lines 23-30» | column 9 «lines 18-22»].

10› As to claim 10, as it is merely a policer that performs the steps of the method of claim 1, it does not teach or further define over the limitations recited in claim 1. Therefore, claim 10 is rejected for the same reasons set forth in claim 1, supra.

11› As to claim 11, as it is merely a policer that performs the steps of the method of claim 5, it does not teach or further define over the limitations recited in claim 5. Therefore, claim 11 is rejected for the same reasons set forth in claim 5, supra.

12› As to claim 14, Fichou discloses a policer according to claim 10 implemented as software running on a processor [claim 13].

13› As to claim 15, Fichou discloses a policer according to claim 11 implemented as software running on a processor [claim 13].

14› As to claim 5, Fichou discloses a method of policing traffic comprising:

defining a traffic class rate guarantee for each of a plurality of traffic classes to be provided by a service, and a service rate guarantee for the service [column 2 «line 1» to column 3 «line 29»]; and

policing combined traffic containing traffic of each of the plurality of traffic classes in a manner which guarantees each class its respective traffic class rate guarantee, and in a manner which guarantees the service rate guarantee for the combined traffic [column 2 «lines 1-21» | column 3 «lines 18-29»].

15› As to claim 6, Fichou discloses the method according to claim 5 further comprising:

for each of the plurality of traffic classes, policing a respective combined traffic class comprising that traffic class plus all conforming higher class traffic, the policing being done at a rate equal to the traffic class rate guarantee for that traffic class plus the traffic class rate guarantees for at least one higher class traffic [column 7 «lines 35-65» | column 8 «lines 9-34» | column 9 «lines 14-58»].

16› As to claim 7, Fichou discloses the method according to claim 6 further comprising:

policing each traffic class such that the respective combined flow of that traffic class plus all conforming higher class traffic is done at a rate equal to the traffic class rate guarantee plus the traffic class rate guarantees for all higher classes of traffic [column 8

«lines 9-34» | column 9 «lines 14-58» | claim 7].

17› As to claim 16, as it merely is a processing platform adapted to perform the steps of the method of claim 1, it does not teach or further define over the limitations of claim 1. Therefore, claim 16 is also rejected for the same reasons as set forth for claim 1, supra.

Claim Rejections - 35 USC § 103

18› The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

19› Claims 4 and 17 are rejected under 35 U.S.C § 103(a) as being unpatentable over Fichou, in view of Bonomi.

20› As to claim 4, Fichou discloses the method according to claim 1 wherein the at least one policing parameter associated with the second class comprises a second class rate guarantee [column 3 «lines 5-17»], wherein:

the second class of traffic is policed such that conforming first class traffic plus second

class traffic does not exceed the first class rate guarantee plus the second class rate guarantee [column 8 «line 54» to column 9 «line 40» where: Fichou's equation (3) demonstrates that the amount of bandwidth allocated to the ABR traffic class is determined by the total bandwidth capacity minus the total reserved bandwidth for the traffic classes].

Fichou does disclose that the first class of traffic is policed in accordance with the first class rate guarantee, with traffic being either marked if allowed by the rate guarantee and if found to exceed the first class rate guarantee [column 1 «lines 6-11» | column 6 «lines 25-27»] but does not explicitly state that they are marked as conforming or nonconforming.

21> Bonomi discloses that traffic exceeding a class rate guarantee is marked non-conforming and traffic allowed by the rate guarantee is marked as conforming [column 2 «lines 37-56» | column 7 «lines 10-26»]. Bonomi discloses that the use of such a marking system ensures compliance with the traffic rate contract established for the traffic class, thereby optimally shaping network traffic. Therefore, it would have been obvious to one of ordinary skill in the art to implement Bonomi's traffic shaping methods into Fichou to efficiently manage and handle incoming traffic of various classes while ensuring the proper quality of service guaranteed for each class.

22> As to claim 17, Fichou discloses an apparatus comprising:

an input for receiving packets of multiple different classes of a single service including a first class and a second class [Figure 7 | column 2 «lines 9-21»];

a policer adapted to police packets of the first class in accordance with at least one policing parameter associated with the first class [column 2 «lines 34-61» | claim 13 where: the article of manufacture is comparable in functionality to the policer];

the policer being further adapted to police packets of the second class in accordance with at least one policing parameter associated with the second class in a manner which gives to the second class at least a portion of a traffic throughput afforded to the first class by at least one of said at least one policing parameter associated with the first class of traffic which is not being used by the packets of the first class [column 2 «line 62» to column 3 «line 18» | claim 13].

Fichou does disclose that the policer mark traffic if allowed by the rate guarantee and if found to exceed the first class rate guarantee [column 1 «lines 6-11» | column 6 «lines 25-27»] but does not explicitly state that the policer is adapted to mark each packet as being conforming or non-conforming.

23› Bonomi discloses a policer adapted to mark each packet as being conforming or non-conforming [column 2 «lines 37-56» | column 7 «lines 1-26» | column 8 «lines 1-17»]. Bonomi discloses that the use of such a marking system ensures compliance with the traffic rate contract established for the traffic class, thereby optimally and efficiently shape network traffic. Therefore, it would have been obvious to one of ordinary skill in the art to implement Bonomi's traffic shaping methods into Fichou to efficiently manage and handle incoming traffic of various classes while ensuring the proper quality of service guaranteed for each class.

24> Claims 8 and 9 are rejected under 35 U.S.C § 103(a) as being unpatentable over Fichou.

25> As to claim 8, Fichou discloses a method of policing a plurality N of traffic classes C_i, each having a respective rate guarantee R_i, i = 1,..., N, N >= 2 [column 2 «lines 9-21» | column 9 «lines 18-20» where: N = 2, the VBR class is equivalent to the first class and the ABR class is equivalent to the second class], the method comprising,

policing traffic of class C_i according to rate R_i [column 8 «line 61» to column 3 «line 25»].

Fichou does disclose, for each other class, policing traffic of class C_i plus conforming traffic of class(es) C_1,..., C_{i-1}, according to an aggregate rate [column 9 «lines 14-58»], but does not explicitly disclose that the aggregate rate is determined by $R_{Ai} = \sum_{i=1}^{N} R_i$. However, while Fichou does not provide the exact same formula as claimed, he does disclose that the ABR class is policed according to an aggregate rate determined by the sum of the VBR rate and the ABR rate.. Therefore, Fichou discloses the same functionality as that of the claimed aggregate rate summation formula. And so it would have been obvious to one of ordinary skill in the art to have reasonably inferred the rate formula as claimed, based on the information and specification provided by Fichou.

26› As to claim 9, Fichou discloses the method of claim 8 wherein each traffic class has a respective burst tolerance BT_i, the method further comprising [column 2 «lines 9-61» | column 9 «lines 18-20»],

policing traffic of class C_i according to rate BT_i [column 2 «lines 45-61» | column 8 «line 61» to column 3 «line 25»].

Fichou does disclose, for each other class, policing traffic of class C_i plus conforming traffic of class(es) $C_1,\ldots, C_{i-1}$, according to an aggregate burst rate [column 2 «lines 45-61» | column 9 «lines 14-58» where: Fichou establishes that burst tolerance is a parameter associated with the traffic rates of each class], but does not explicitly disclose that the aggregate burst tolerance is determined by $B_{Ai} = \sum_{i=1}^{N} BT_i$. However, as Fichou implicitly suggests the inclusion of burst tolerance as a parameter in establishing the traffic rates for each class, one of ordinary skill in the art would have reasonably inferred the inclusion of Fichou's burst tolerance parameter into his summation equation [column 9 «lines 20-31»] for determining the policing rates of the ABR class. Therefore, it would have been obvious to one of ordinary skill in the art to include the burst tolerance into Fichou's summation formula in determining the traffic rate for the ABR traffic class, as Fichou discloses that the burst tolerance is a necessary parameter in establishing traffic rates [column 2 «lines 54-61»].

27› Claims 12 and 13 are rejected under 35 U.S.C § 103(a) as being unpatentable over Fichou, in view of Pillar et al, U.S Patent No. 6.438.106 ["Pillar"].

28> As to claim 12, Fichou does not explicitly disclose the policer being implemented as an application specific integrated circuit.

29> Pillar discloses that it is old and well known in the art to implement an object as an application specific integrated circuit [column 6 «lines 20-23»]. Therefore, one of ordinary skill in the art would have reasonably inferred that Fichou's policer be adapted and implemented as an integrated circuit as the use of integrated circuits is ubiquitous throughout the art.

30> As to claim 13, Fichou does not explicitly disclose the policer being implemented as an application specific integrated circuit.

31> Pillar discloses that it is old and well known in the art to implement an object as an application specific integrated circuit [column 6 «lines 20-23»]. Therefore, one of ordinary skill in the art would have reasonably inferred that Fichou's policer be adapted and implemented as an integrated circuit as the use of integrated circuits is ubiquitous throughout the art.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S Patent No. 5.530.695 to Dighe et al [abstract – use of burst and rate parameters to maintain QoS for specific traffic classes];

U.S Patent No. 6.067.301 to Aatresh [abstract - distribution of excess bandwidth in a priority basis; higher priority queues receive the first opportunity, any continued excess is cascaded down the priority queues];

U.S Patent No. 6.324.165 to Fan et al [abstract - providing QoS guarantees to traffic classes and distributing unused bandwidth in a weighted round robin fashion].

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dohm Chankong whose telephone number is (703)305-8864. The examiner can normally be reached on 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on (703)305-8498. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DC

Dung C. Dinh
Primary Examiner